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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/626,593

07/27/2000

Andre Beaudin

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05/04/2004

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EXAMINER

LUGO, DAVID B

ART UNIT

PAPER NUMBER

2634

6

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/626,593

Applicant(s)

BEAUDIN ET AL.

Examiner

David B. Lugo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-13 and 16 is/are rejected.
- 7) ☒ Claim(s) 8, 9, 14 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. As stated in the previous Office action, acknowledgment is made of applicant's claim for foreign priority based on an application filed in Canada on 8/9/99. However, applicant has not filed a certified copy of the 2,279,774 application as required by 35 U.S.C. 119(b).

Response to Arguments

2. Applicant's arguments filed 2/10/04 regarding claims 1-7, 10-13 and 16 have been fully considered but they are not persuasive.

3. Regarding the rejection of claims 1-7, 10-13 and 16 under 35 U.S.C. 103(a) in view of Kaewell, Jr. et al. and Garner, applicant argues that the cited references do not disclose, teach or suggest applicant's invention, and further, there is no motivation to combine the references. The examiner respectfully disagrees. Kaewell, Jr. et al. is considered to meet all of the limitations of claim 1, namely a combiner, shown in Fig. 4, comprising means for receiving strength-indicative signals (rssi_a, rssi_b) and demodulated signals (discrim_a, discrim_b), means for generating control signals (21-23) responsive to the strength-indicative signals, and means for combining in linear proportions (24-26) determined by the control signals those of the data signals which are above a predetermined combiner threshold, as regulated by switches 45 and 46, to provide a combined output signal, as described in the previous Office action, with the exception of combining the signals which differ in strength by less than a predetermined margin. Garner is considered to teach a control circuit of a diversity combiner that bases its decision on whether the difference in signal strength between the two signals to be combined are above a preset level, as stated in the previous Office action. Further, it is considered to have been obvious to one of

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ordinary skill in the art to combine the teachings of Garner in the diversity of Kaewell, Jr. to reduce the amount of noise or errors introduced into the composite signals that occurs when the difference in strength between the signals is large, as stated by Garner in column 3, lines 35-38.

4. Kaewell, Jr. et al. and Garner are thus considered to meet all the limitations of claims 1 and 10, and motivation to combine the references is adequately recited in Garner. Therefore, the rejection of claims 1-7, 10-13 and 16 is maintained.

5. Applicant's arguments, see page 13, last paragraph, filed 2/10/04, with respect to claims 9 and 15 have been fully considered and are persuasive. The rejection of claims 9 and 15 has been withdrawn.

Claim Objections

6. Claims 1-16 are objected to because of the following informalities:

- a. Claim 1, line 4, "the strength" should be --a strength--.
- b. Claim 2, line 2, "the strongest" should be --a strongest--.
- c. Claim 3, line 3, "the greatest proportion" should be --a greatest proportion--.
- d. Claim 3, lines 3-4, "said data signals" should be --said demodulated data signals--.
- e. Claim 9, line 2, "the relative DC levels" should be --relative DC levels--.
- f. Claim 9, lines 3-4, "calibrates the level" should be --calibrates a level--.
- g. Claim 10, line 5, "indicative of the strength" should be --indicative of a strength--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-7, 10-13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaewell, Jr. et al. U.S. Patent 5,402,451 in view of Garner U.S. Patent 5,530,925.

9. Regarding claims 1 and 10, Kaewell, Jr. et al. teach a spatial diversity combination circuit in Fig. 4 comprising means for receiving demodulated data signals (discrim_a, discrim_b) and strength-indicative signals (rssi_a, rssi_b) each indicative of the strength of one of the received data signals, means for generating control signals (21-23) responsive to the strength-indicative signals, and means for combining in linear proportions (24-26) determined by the control signals those of the data signals which are above a predetermined combiner threshold, as regulated by switches 45 and 46, to provide a combined output signal (see col. 2, line 30 to col. 3, line 29).

10. Kaewell, Jr. et al. do not teach that the signals are only combined when they differ in strength by less than a predetermined margin.

11. Garner discloses a control circuit for a diversity combiner that bases its decision on whether the difference in signal strength between the two signals is above a preset level (col. 3, lines 28-41).

12. It would have been obvious to one of ordinary skill in the art to combine the teachings of Garner in the diversity combiner of Kaewell, Jr. et al. to reduce the amount of noise or errors introduced into the composite signals that occurs when the difference in strength between the signals is large, as stated by Garner in col. 3, lines 35-38.

13. Regarding claim 2, Garner states in col. 3, lines 38-41 that when the difference in power is greater than a preset level, the signal having the greater signal strength is selected.

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14. Regarding claim 3, Kaewell, Jr. et al. teach that in the combination, the greatest proportion is of the strongest signal (col. 2, lines 45-61).

15. Regarding claims 4 and 5, Kaewell, Jr. et al. and Garner do not expressly disclose that the margin is between 3dB and 12 dB, or is 6dB. However, a selection of the exact margin used is deemed a design consideration that fails to patentably distinguish over the prior art of Kaewell, Jr. et al. and Garner.

16. Regarding claim 6, Kaewell, Jr. et al. further disclose that the spatial combination is implemented in a DSP (col. 2, lines 40-44).

17. Regarding claim 7, Garner discloses the evaluation of the strength-indicative signals (col. 3, lines 38-44).

18. Regarding claims 11 and 16, Kaewell, Jr. et al. disclose a spatial diversity radio receiver in Fig. 1 comprising multiple receiving components (11, 12) for receiving data through antennae, each antenna (13, 14) associated with a receiving component having circuitry for providing a signal indicative of the strength of the received data signal and a data signal, said receiver including a combiner according to claims 1 and 10, respectively, where the combiner is taught by the combination of Kaewell, Jr. et al. and Garner as discussed above, and inherently comprising circuitry for evaluating the combined output.

19. Regarding claim 12, Kaewell, Jr. et al. disclose a spatial diversity radio receiver in Fig. 1 comprising multiple receiving components (11, 12) for receiving data through antennae, each antenna (13, 14) associated with a receiving component having circuitry for providing a signal indicative of the strength of the received data signal and a data signal, said receiver including a combiner according to claim 2, where the combiner is taught by the combination of Kaewell, Jr.

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et al. and Garner as discussed above, and inherently comprising circuitry for evaluating the combined output.

20. Regarding claim 13, Kaewell, Jr. et al. disclose a spatial diversity radio receiver in Fig. 1 comprising multiple receiving components (11, 12) for receiving data through antennae, each antenna (13, 14) associated with a receiving component having circuitry for providing a signal indicative of the strength of the received data signal and a data signal, said receiver including a combiner according to claim 4, where the combiner is taught by the combination of Kaewell, Jr. et al. and Garner as discussed above, and inherently comprising circuitry for evaluating the combined output.

Allowable Subject Matter

21. Claims 8, 9, 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and amended to overcome the objections set forth in this Office action.

Conclusion

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David B. Lugo** whose telephone number is **(703) 305-0954**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Stephen Chin**, can be reached at **(703) 305-4714**.

Any response to this action should be mailed to:



Commissioner of Patents and Trademarks

P.O. Box 1450

Alexandria, VA 22313-1450

or faxed to:

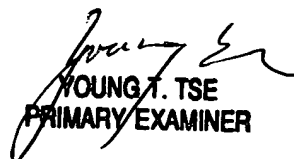
(703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

dl

4/26/04


YOUNG T. TSE
PRIMARY EXAMINER